measure with the position-micrometer the angle formed by the two well-defined edges, but the comet would not bear any illumination of the wires, so I inserted a thick wire (made of a horse-hair) which I could see plainly against the sky, and by this I made the angle 86 degrees ±. Definition was exceptionally good, the next entry in my observatory-book being "δ *Cygni* clearly split."

Keele, Newcastle, Staffordshire, Dec. 2, 1871.

Observations of Tempel's Comet (1871, *Nov.* 3), *at Mr. Bishop's Observatory, Twickenham.* By J. R. Hind, F.R.S.

	Twickenham M.T.	R.A.	N.P.D.
	h m s	h m s	° ′ ″
Nov. 8	5 47 34	18 39 50·07	104 9 15·9
9	6 9 24	18 40 17·80	105 7 40·8
10	5 51 29	18 40 43·95	106 4 19·1
12	5 52 38	18 41 38·70	107 57 24·7

Post-perihelion Places of Tempel's Comet, calculated from Mr. Hind's Elements. By Mr. W. E. Plummer.

0^h G.M.T.	R.A.	N.P.D.	Log. Δ.
	° ′	° ′	
1871, Dec. 21	281 50	139 55	0·1340
29	280 6	145 30	0·1142
1872, Jan. 6	277 23	151 21	0·0786
14	273 2	157 20	0·0342
22	264 14	164 8	9·9795
30	233 30	171 28	9·9171
Feb. 7	151 8	168 55	9·8546
15	126 16	153 7	9·8108
23	119 40	133 24	9·8105
Mar. 2	117 22	115 1	9·8597
10	116 46	100 59	9·9370
18	117 4	91 11	0·0199

On Feb. 15 the intensity of light is three times that at the date of the Comet's discovery, and on March 10 it is precisely the same. The Comet may be again observed in Europe in March.

Elements and Ephemeris of Tempel's Comet.
By J. R. Hind, F.R.S.

The following elements are founded upon an observation by Dr. Winnecke at Carlsruhe on Nov. 5, and two observations at Mr. Bishop's Observatory on Nov. 8 and 10.

Perihelion Passage, 1871, Dec. 20·29115 G.M.T.

Longitude of Perihelion ..... 263° 33′ 52″ } Apparent Equinox,
,, Ascending Node.. 147 28 38 } Nov. 0.
,, Inclination 82 31 21

Log. Perihelion Distance 9·8321610.

Motion retrograde.

For the middle observation $\Delta\alpha\,(c-o) = +7''$, $\Delta\alpha \cdot \cos\delta = +11''$.

Hence the following Ephemeris, which may be useful in the reduction of the observations :—

0h G.M.T.	R.A. h m s	N.P.D. ° ′	Log. Δ.
Nov. 3	18 37 44	98 57·3	0·10155
4	38 7	99 58·0	0·10355
5	38 30	100 58·0	0·10516
6	38 54	101 57·6	0·10698
7	39 19	102 56·6	0·10881
8	39 45	103 55·1	0·11066
9	40 11	104 53·0	0·11253
10	40 38	105 50·5	0·11438
11	41 5	106 47·4	0·11621
12	41 32	107 43·8	0·11803
13	42 0	108 39·7	0·11985
14	42 28	100 35·1	0·12167
15	18 42 57	110 29·9	0·12349

The co-ordinate constants, for the equators, are,

$$x = r.\,[9{\cdot}9274093] \,.\, \sin(v + 21^\circ\,20'\,37'')$$
$$y = r.\,[9{\cdot}7590534] \,.\, \sin(v + 175\ 17\ 16)$$
$$z = r.\,[9{\cdot}9898798] \,.\, \sin(v + 283\ 26\ 2)$$

Ephemeris of Tuttle's Comet for the Southern Hemisphere.

By J. R. Hind, F.R.S.

The following Ephemeris is calculated from the elements of Dr. Tischler, but with perihelion passage taken Dec. 1·7974 G.M.T. When found by Dr. Winnecke on October 14, and considered pretty bright, I = 0·58.

0h G.M.T.	R.A. h m s	N.P.D. ° ′	Log. Δ.	I.
1871, Dec. 18	11 52 2	143 5·5	9·9286	1·24
20	11 58 57	145 20·6	9·9399	
22	12 6 12	147 27·2	9·9511	1·08
24	12 13 48	149 25·7	9·9623	
26	12 21 45	151 16·3	9·9734	0·94
28	12 30 3	152 59·5	9·9843	
30	12 38 42	154 35·6	9·9950	0·82